PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Docket No: Q79863

Peter JAENECKE, et al.

Appln. No.: 10/780,745 Group Art Unit: 2611

Confirmation No.: 1795 Examiner: Kabir A. TIMORY

Filed: February 19, 2004

For: METHOD FOR REDUCING A PEAK-TO-AVERAGE POWER RATIO

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated June 26, 2007, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

Applicant turns now to the rejections at issue:

Claims 1, 2, 4, and 11-15 are currently pending in the present application. Claims 3 and 5-10 have been canceled. Claims 1, 2, and 12 remain rejected under §102(e) as being anticipated by Morris et al. (hereinafter "Morris"). Claims 4, 11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris in view of Lipka (hereinafter "Lipka"). Applicant submits the rejections are improper.

In the Amendment filed April 20, 2007, Applicant argued that Morris fails to disclose using the position of the peak signal. However, in response, the Examiner disagreed and cited FIGS. 1a and 1b of Morris, and stated, "figure[s] 1a and 1b illustrate an exemplary signal

position with several signal with maximum peaks exceeding a specified threshold and the same signal after being subtracted and clipped to the a [sic] level equal to the specified threshold." Applicant respectfully disagrees with the Examiner's rationale.

While FIGS. 1a and 1b appear to show a signal having maximum peaks at several positions, Applicant points out that the positions of the peaks shown in FIGS. 1a and 1b are not used to provide locations and amplitudes for the soft-clipping of the respective portion of the signal. Instead, only the amplitude of the peaks is used in the soft-clipping described in Morris.

For example, paragraph [0042] of Morris states the scaling function, $f_w(peak)$, is a function of the signal peak value. Further, the actual peak reduction function of Morris, as described in paragraph [0045] and [0046], only utilizes the peak value and an index number, where the index is provided by the counter 546. As stated in paragraph [0044] of Morris, the counter counts modulo L (the length of the scaling window) and is used to generate the index value noted above. Thus, neither the scaling function, nor the reduction function in Morris use both the position and amplitude of elementary functions corresponding to a decomposed portion of an input signal to be soft-clipped. Therefore, Morris fails to disclose these claimed features.

Moreover, although the Examiner points to the signals shown in FIGS. 1a and 1b of Morris as disclosing both the claimed position and amplitude features, Applicant points out that the Examiner has not shown that peak positions and amplitudes of the signals in FIGS. 1a and 1b are used as claimed in claim 1. That is, even assuming, *arguendo*, FIGS. 1a and 1b of Morris disclose positions of maximum points, nothing in Morris discloses or suggests using the positions of the maximum points to perform the soft-clipping.

To the contrary, as noted above, the reduction function in Morris only depends on the peak value and the index generated by the counter. Similarly, the scaling function only depends on the peak value. Thus, Morris fails to disclose wherein positions for subtracting the scaled reference function from each of the elementary functions and the scaling of the reference function are given respectively by a position of a maximum and an amplitude at the maximum of the corresponding elementary functions, such that the position of the maximum of each of the elementary functions and the corresponding amplitude at the maximum of each of the elementary functions provide locations and amplitudes for the soft-clipping of the portion of the signal, as claimed.

Indeed, Morris is completely silent on any utilization of the position of the peak signal in any manner whatsoever. As a result, Morris fails to disclose or suggest the above-noted features of claim 1.

Regarding claim 2, the Examiner asserts Morris further discloses, determining parameters for the elementary functions by determining an amplitude value and a position value for each of the functions. In support of his position the Examiner states, "determining parameters is interpreted to be measuring an input signal, detecting a signal peak with a magnitude exceeding a specified threshold and magnitude is interpreted to be the amplitude … Paragraph 0007, lines 1-6." Again, the Examiner's reliance on Morris is misplaced.

First, the Examiner does not specify which part of Morris discloses determining a position of an elementary function. Rather, the Examiner asserts measuring an input signal corresponds to determining parameters. However, measuring a signal does not necessarily include determining both an amplitude value and a position value. Further, the cited paragraph [0007] only mentions detecting a signal peak with a magnitude exceeding a specified threshold. That is, the cited text relied on by the Examiner describes detecting the peak. However, the claimed invention requires, *inter alia*, determining both an amplitude value and a position value. Morris, on the other hand, is silent as to the determining of any signal value whatsoever.

In view of the above, Morris fails to disclose the claimed features regarding the position of a maximum of each of the elementary functions. Accordingly, claim 1 is patentable over Morris for at least these reasons. Similarly, claim 12 is patentable for analogous reasons. Further, claim 2 is patentable for the reasons stated above, as well as for its dependency on claim 1.

Regarding claims 4, 11 and 13-15, the Examiner admits Morris fails to disclose all of the features of claim 4. Nevertheless, the Examiner asserts Lipka teaches, "an analogous approach in deriving a similar equation to compute the peak power reduction (paragraph 0059 and 0060) as shown below[.]" The Examiner also states, "[w]here the first equation shows the peak reduction strategy for a single carrier and the second equation shows the strategy for multiple carriers. As shown in the above equations Lipka is using these formulas for subtracting the peak power of a single and multiple carrier signal. One of ordinary skill in the art would have clearly recognized that these two equations show a similar method of computing the peak power of a

signal as the equation in claim 4. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the similar and related formula as taught by Lipka to compute peak power reduction. [sic] In order to detect amplitude peaks and preventing any amplitude peaks from appearing in the processed output signal, the above formula can be used." Again, Applicant respectfully disagrees with the Examiner's position.

First, the Examiner admits Lipka does not specifically teach the claimed formulas noted above. Instead, the Examiner asserts one of ordinary skill in the art would have recognized that the equations of Lipka show a "similar" method. Thus, the Examiner has not made a *prima facie* case of obviousness, because the Examiner has not asserted that any of the cited references teaches or suggests the features regarding the formulas which claim 4 specifically recites.

In particular, to establish a *prima facie* case of obviousness, the combined references must disclose all the claim limitations.[1] In the present case, as noted by the Examiner, none of the prior art references, either alone or in combination, teaches or suggests all the features of the claim. Thus, the Examiner has not established a *prima facie* case of obviousness.

Furthermore, even if one modified Morris in view of Lipka, as the Examiner suggests, the suggested combination still fails to disclose the specific formulas set forth by claim 4. For example, claim 4 recites, *inter alia*, "minimising" the claimed functions. Lipka, however, is completely silent as to a minimization of any function whatsoever. Thus, Lipka is deficient in this regard.

Moreover, even assuming, *arguendo*, the prior art of record discloses the features of claim 4, one of ordinary skill in the art, at the time the invention was made, would not have been motivated to modify the prior art of record as the Examiner suggests, i.e., to detect and prevent amplitude peaks, since both Morris and Lipka are specifically designed to perform peak power reduction (Morris) and peak cancellation (Lipka). In other words, one of ordinary skill in the art would not modify the prior art of record in order to detect and prevent amplitude peaks, since that is precisely what the prior art of record is designed to do. Instead, the Examiner conclusion of obviousness is based on improper hindsight reasoning.[2]

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[1] See MPEP §2142 (emphasis added).

[2] See MPEP § 2145 (X)(A).

Additionally, modifying Lipka as the Examiner suggests would impermissibly change the principle of operation of Lipka.[3] Specifically, if a proposed modification or of the prior art or record would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.[4] In the present case, Lipka discloses a very specific method of peak cancellation using the hardware circuitry shown in FIG. 5. If one of skill in the art were to modify Lipka to incorporate the minimization of functions, the specific hardware components would have to changed, and consequently, the precise interoperability of the components shown in FIG. 5 of Lipka would be changed. As a result, such a modification of Lipka would change the entire principle of operation of Lipka.

In summary, the Examiner has failed to make a *prima facie* case of obviousness, and none of the cited references, either alone or in combination, teaches or suggests all of the features in claim 4. Further, one of ordinary skill in the art would not have modified Lipka as the Examiner suggests, as Lipka already discloses a method for peak cancellation, and modifying Lipka to obtain the claimed invention would impermissibly alter the principle of operation of Lipka.

Accordingly, claim 4 is patentable for at least these reasons. Similarly, Applicant submits claims 11 and 13-15 are patentable for analogous reasons.

Respectfully submitted,

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[3] See MPEP § 2143.01(VI).

[4] See *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Modified PTO/SB/33 (10-05)

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	First Named Inventor Peter JAENECKE	
	Art Unit 2611	Examiner Kabir A. TIMORY

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Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

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